We Claim

1. A method of determining a routing for packets in a network, said method comprising:

a) dividing said network into WAN (Wide Area Network) segments and LAN (Local Area Network) segments;

b) determining a routing for packets through each segment;

c) combining routing results obtained in step b) to obtain a total routing through the network.

2. A method as in claim 1 wherein step a) includes determining which network objects are routers and which network objects are non-routers.

3. A method as in claim 2 further including partitioning non-router network objects into discrete LAN segments, each LAN segment being a collection of connected non-router network objects separated from other non-router network objects by at least one router.

4. A method as in claim 2 including partitioning routers into WAN segments, each WAN segment being a collection of connected routers separated from other routers by at least one non-router network object.

5. A method as in claim 4 wherein step b includes determining for each WAN segment a sequence of routers a packet passes through from a source router to a destination router in the WAN segment.

6. A method as in claim 3 wherein step b

includes determining for each segment which non-router network objects a packet passes through from a source non-router network object to a destination non-router network object in the LAN segment.

7. A method as in claim 1 wherein step b) is executed from a plurality of beacons located at different points in the network.

8. A method as in claim 6 wherein step b includes reading a table of source addresses at each non-router network object in each LAN segment, said table containing source addresses of packets which transit through said non-router network object.

9. A method as in claim 3 wherein step b is accomplished using a previously determined topology of the network.

10. A method as in claim 5 wherein the sequence of routers a packet passes through is determined from a plurality of beacons located at different points in the WAN segment.

11. A method of determining a packet's routing through a LAN segment composed of multiple network objects, said method comprising:

a) determining a network address of a source network object;

b) determining a network address of a destination network object;

c)determining which network objects receive packets from the source network object;

d) determining connections between network objects using the topology of the LAN segment; and

e) determining which network objects are in a route from the source network object to the destination network objects based on data obtained in steps c) and d).

12. A method of determining the performance of a route in a network, the method comprising:

a) determining a source network object;

b) determining a destination network object;

c) determining a route through the network from the source network object to the destination network object;

d) measuring the network performance of each network object on the route; and

e) aggregating the network performances obtained in step d) to obtain a total network performance for the route.

13. A method as in claim 12 wherein said network performance is that of a packet's delay through said network element and said total network performance for the route is the total end to end delay for a packet traversing said route.

14. A method as in claim 12 wherein said network performance is that of a network element's drop rate of packets and said total network performance is the end to end transmission fraction over a path.

15. A method as in claim 14 wherein said end to end transmission fraction over a path is determined

according to

$$T = \prod_{i=1\_N} (1 - D(i))$$

where

T = end to end transmission fraction over a path from object 1-N

D(i) = drop rate of device i.

16. A method as in claim 12 wherein said network performance is a network element's throughput and said total network performance is a determination of bottlenecks in said path.